C-1 THRU C-249
INDIA TRIP 1961.

magic!

Simpson

THEME NOTE BOOK

College Ruled - Margin

No. 699?

SEE INSIDE BACK COVER FOR MAGIC!

69¢

PLUS TAX IF APPLICABLE

1961 Motor Map of Ceylon
Survey Department

Southern Forest Rangers College and Forest Research Centre,
Coimbatore 2
Dr J. C. Basu Choudhuri

Rangoon
Dr Chandra C. Pant
WHO 12 Newlain Rd Mention Harris

~~LUDHIANA~~ LUDHIANA, PUNJAB LUDHIANA
Dr. Sardar Singh
Agrik College
~~Shimla~~ SIMLA

CULTURE NOTES

CULTURE 1 Oligotoma saundersii? in small patch of bark of small trees along waterfront. Released female on bark immediately ringed by groups of Dasyphylla and dismembered. Oedembia

E. PAKISTAN

CULTURE 2 Chittgong docks Single tree between warehouses, soft, punky bark. Saundersii? One male carried in jaws of ant O. gracilipes

28 mi E. Chittagong IX-14-61

CULTURE 3 Sehasnati Forest. ∧ Remnant of old rain forest now badly disturbed, 75 ft el, rainy season. Several species of embiids on soft bark of saplings and dead limbs. 1 penult of multicolor Oedembia

CULTURE 4 Same but mostly multicolorous sp. prefering dead loose bark on cut off saplings of soft flaky types. Webs thin, filmy, speckled with frass. Also in midst of braided vine on large trunk. About 25 in pure culture. Oedembia

CULTURE 5 Hanbang Forest 30 mi. S. Chittagong Spotty natural forest about 75' el on low hills Embiids scarce in undisturbed forest. This culture in crevice bark crevices near rest house. probably several spp. Aposthonia ceylonica ?

CULTURE 6 Same. On large tree with big glossy dark green leaves. Small sp. (Teratembiid - like) in superficial bark flakes, numerous. ♀ pale tan Aposthonia minuta

CULTURE 7 Same. Crevices in rest house and at one legs of split bamboo fence, several species including multicolor. Oedembia

CULTURE 8 Same. Same niche as #6 with 1♀ multicolor and more tiny species. This colony radiated in horizontal crevice. Many only instar. Aposth minuta

CULTURE 9 6 MI. S. DOHAZARI 12' EL 19-IX-61

East Pakistan Large fig tree in midst of rice paddy country. Scattered embiid colonies in coarse bark crevices and along exposed ground roots.

2 species. (1) a large multicolor ♀ with 3 adult male Embiidae. Prob. new genus. Some early instar. Larger superficial tunnels somewhat obscured with frass and debris, lead to crevice retreats.

2. Smaller species with appearance and habits of soundevii.

Oedembia

CULTURE 10 Baraiyadhala, 27 miles N. Chittagong
Forest station area in rice paddy land at base of low, forested hills. Small colonies in bark of trees bordering pond. Small tan species genus? Apposthonia n. sp.

BARAIYADHALA

CULTURE 11 Same but high in forested hill tract about 150' el. Mixed tropical forest with embiids on flaky bark, esp. on sheltered undersurface of trees. 2 species (1) a small tan sp. probably same as above. (2) Multicolored embiid, 1 ♀ and 1 juv. about smaller than culture 9. Oligembia
Teratembiid

CULTURE 12 Roadside tree near Feni, E. Pakistan
17 ft el. O. greeniana

CULTURE 13 STOP 8 LAWACHERA FOREST, SRIMANGAL, E. PAK.
IX-27-61

30 year old teak plantation with dense secondary vegetation on low hills 75 meters elev. Scattered patches of original forest in ravs and isolated trees. Large sheet colonies produced by progeny of individual black females (Apposthonia ?) webs white devoide of frass. Eggs laid on bark surface in dense, single layer packets fused with matrix of dark material about 200 eggs per cluster. Young now in 2nd or 3rd instar; radiate gregariously like scolytid borers. Occasionally found on dead bamboo

EOSEMBIA N. SP.

CULTURE 14 +14a Same forest

Multicolor females and 3rd instar young in obscure isolated colonies in soft bark. Webs covered with frass, difficult to see. Prefer old dead outer bark flakes or bark of dead limbs and vines. Web very flimsy, sheet-like (not defined in definite tunnels

Oedembia

CULTURE 15 + 15A East Pakistan: CHICKNAGUL, 10 MI. N.
SYLHET IX-29-61 Lowland remnants of wet forest
Embiids often in deep, damp moss of shaded tree trunks. Also in braided vines on large fig tree. Colonies often sheet-like on surface and densely speckled with ~~frass~~ Silted frass. Tunnels ramify into soft bark flakes. Camps at Oil geologists

Aposthonia n. sp. (Oreembia?)

CULTURE 16 India: 3 MI. N. DAWKI 150 M ASSAM
Lower slopes of mtn. forest. coarse-flaked bark of roadside tree. Apparently same sp. as 15 Aposthonia n. sp.

+17A

CULTURE 17 India. 7 MI. S. PYNURSLA 1000 M
Cool zone, rich scrub flora badly cut and burned by Khasi villagers. Embiid colonies rare in low, dense forest on mossy bank. Individual embiids under small bark flakes. Silk frass speckled!

Aposthonia n. sp.

CULTURE 18 ASSAM: PYNURSLA 1350 M X-1-61
Rough mtn. terrain. Low forest in cyns, slopes badly chopped. Pine on ridges. Embiids in dry bark surfaces sheltered from excessive moisture. Individual embiids in small frass-speckled colonies. ms 3-4 penult ♂ 2-3 females

Oreembia

CULTURE 19 ASSAM: 10 MI. S. SHILLONG 1650 M
X-1-61 Pine zone + agriculture. Large, extensive embiid colonies in rough bark of cherry + other decid. trees Numerous half grown embiids cultured in large jar.

Oedembia

CULTURE 20 SHILLONG, ASSAM (KENCH'S TRACE ZOOL. SURVEY OF INDIA STATION) X-2-61 Large colonies following vertical crevices of Pines and Cryptomeria bark Oedembia

CULTURE 21 ASSAM: CHERRAPUNJI 1350 M 2 SP?
in deep moss on saplings in cloud forest also on hanging moss clumps. Rare. 1 smaller black female, mature Several in mixture of larger sp. with pale coxae and anteroral tejas. Agosthonia sp died virgin

CULTURE 22 ASSAM: 4 MI. N. SHILLONG 1000 M
Mixed pine and broad-leaf mtn. forest. 1 ♀ multicolor in flaky bark of large tree. 1 juv. oligotomid in dead twig Eosembia

CULTURE 23 + 23A ASSAM: 13 MI. N. SHILLONG 900 M
Cleared, burned hills. Embiids in splintered saplings and dead twigs in agr. thickets of small trees. all multicolor Oedembia

24 CULTURE 24 + 24A + 24B ASSAM: AMSOI FOREST 50 M
28 MI. S.W. NOWGONG X-6-61 Dense, old plantation of teak etc., flat, rather dry, much undergrowth.
Culture 24 at loose bark of 1" dead dry limb hanging in vine. Embiids retreat into punky interior
Culture 24A at bark surface webs white clear of frass. Similar to culture 13 (3rd instar)
Culture 24B in twig
C-24 Agosthonia m. sp. Oedembia, Eosembia

25 CULTURE 25 ASSAM: 13 MI. N.E. NOWGONG 90 M
Lowland bamboo thicket along river with scattered tall bank trees smallish black Oligotoma in frass-specked colonies
Oligotoma guenisna

CULTURE 26 ASSAM: GOTANGA, KAZIRANGA
X-5-61
100 M Virgin forest in valley. Apoikonia under dead matted leaves on bark dead ~~twig~~ branches ~~near ground~~ of down tree. Apoikonia

26 A Same 26 B bark flakes living tree

CULTURE 27 ASSAM: KOHARA, KAZIRANGA RESERVE
X-7-61
100 M Forested rocky creek ravine below guest house. Wet zone. Embiids in tunnels along winding vines on small saplings, dead branches and beneath bark flakes of large tree. mixed culture 2-3 spp.
Embia

28 CULTURE 28 ASSAM: GOLAGHAT 75 M
coarse-barked roadside tree Oligotoma common multicolor less common 1♀ only
Oligotoma gurneyi

CULTURE 29 & 29A ASSAM: GARAMPANI
FOREST RESERVE (NEAR GOLAGHAT) 100 M
Semi virgin forest multicolor under bark flakes, and twisted vines. In latter retreat tunnels follow path of vine. All females, no eggs or young seen Oedembia

CULTURE 30 ASSAM: MELENG FOREST RESERVE
X-11-61
(10 MI. S. JORHAT) 100M Old forest plantation
Embiids (multicolor) in spotted sheet webs on bark cracks of tree near forest office. ♀ only no eggs or young

31 CULTURE 31 ASSAM: ABHOYPUR F. RES.,
X-12-61
NAPHUK 100 M Old forest plantation same species as above, same conditions but deep in forest. Low hills.
Oedembia

CULTURE 32 ASSAM: TIRAP FOREST STAT.
8 MI. E. OF LEDO X-14-61 130 M
Isolated dipterocarp tree in swidden field.
Small embiids under hard bark plates, colonies not externally visible, Multicolor in some niche in large bark cracks. Ayoothonia n. sp.

CULTURE 33 Same Same habitat but also on damp mossy bark and vines in virgin forest behind field. Multicolo with slightly purple fuso-speckled webs.
Oedembia

CULTURE 34 Margherita 100 M
Large roadside fig across from police station and above river. Oligotoma and multicolor common in fuso-speckled tunnels possibly 3 species X-14-61 no life XII-11-62
Oligotoma greniana

CULTURE 35 ASSAM: 5 MI W. DIGBOI
PRIMARY dipterocarp forest. Multicolor in shaded bark 110 M X-14-61
Eosembia

CULTURE 36 ASSAM: JORHAT X-15-61
Large shade tree in residential section. Embiids (Oligotoma & multicolor) common on and in bark
Lumbertiana & Oedembia

CULTURE 37A,B,C, ASSAM: 12 MI. S. ~~GAUHATI~~ X-17-61
GOALPARA 25 M Rather dry teak and sal plantation. Multicolor in culture A on bark and in pith of hanging small dead vines. B+C brown species with pale antennal tips in spunky bark of small sal sapling restreats in branch nodes and vine pith
Eosembia

CULTURES 38A + 38B ASSAM: 7 MI. N. BILASHI-
PARA 4 M X-18-61 Paper-bark roadside tree in rice paddy country
Oligotoma greniana 38A lumbertiana

CULTURES 39A + B ASSAM: 4 MI. W KOCHAGAON
Old sal plantation. Multicolor females in dead vines leaves (mid rib cops) hanging in small big-leaf understory tree. Also on bark in the usual manner. Plain at base of Himalayas 75 M el.

Oedembia

CULTURE 40:a-II Same place. Small oligotoma under bark flakes, tunnels reticulate under flake, visible externally only at flake edge all stages but never many per colony

Apsothonia n. sp.

CULTURE 41 ASSAM: 10 MI SW. KOCHAGAON
50 M Primary mixed valley forest, occasional cyad + termite mds. Multicolor in dead twigs in usual way cop. nymphs + .

Greniera

discontinued x-1-63 CULTURE 42 Same place. Surface of termite md, small cop. in shallow bark. Possibly 3 sp.

Greniera

43 CULTURE 43 Same place. 1 slightly damaged female, dark brown, fair size. Only one seen. On surface of large termite md. Normal retreat in md. ? device

Apsothonia n. sp.

44 CULTURE 44 W. BENGAL: 10 MI. S. MAYNAGURI
discontinued 85 M x-21-61 Sacred fig tree surrounded by citrus grove in valley agric. Embiids in bark crevices of citrus. Small oligotoma + jet black.

Oligotoma greniera

45 CULTURE 45 W. BENGAL: LATAGURI 108 M
x-21-61 Primary forest on plain at base of mts. Embiids in dead twigs of low trees + dead vines Spacked webs at nodes retreat into hollow pith Multicolor ♀.

Oedembia

C-47 1st instar IV-63

2 penult ♂ 2♀ XII-7-62

CULT. 46A W. BENGAL: CHUNBATI (12 MI. N. SILIGURI) 558 M X-21-61 Mtn forest zone Agrothoris in frass and dirt covered tunnels in dead bark of splinted limbs of small roadside tree 1 spot 07 collected, 2 pennult winged males, some juvenile no life after Jan. 9, 1962

CULT. 47 A+B W. BENGAL: DARJEELING (WILLOWDALE). X-23-61 7000' el Wafer-thin, flaky bark of Rhododendron arboreum on grounds of D.F.O. Agrothoris himalayensis adult 07 ♀ + young in flake cavities and beneath powdery-green lichen encrusted flakes. Common on one tree or others. Trees 15' high 6" dia

CULT. 48 A+B W. BENGAL: GING, 4500' el 6 mi N of Darjeeling, Multicolor young incl many X-24 pennate, on bark of small trees in fruit garden. Tunnels conspicuous. Those of young lavender. ~~with~~ all with much frass.

Oedembia

CULT. 49 W. BENGAL Same as above. Obscure smaller burrows in dead twigs of same tree. Tunnels dense, white, almost completely covered with frass. 3 adult 07 in vial.

Agrothoris n. sp.

50 CULT 50 W. BENGAL: BADAMTAM FOREST RES. 1800' EL X-24-61 Native sal forest with small palm and grass understory. Hilly with endemic pine. 60" rainfall. Embiids 3 spec incl multicolor, medium oligotoma (perhaps same as 49) and small sp. in brittle bark of sal and a dry dead bark portion of another sp.

Oligotoma greeniana

Oedembia

discontinued
x-1-63

BADAMTAN FOREST

CULT 51. Some place a bit lower with schist rock small ridge. Large Apostolopsis in matted leaves in sal forest, also under rocks, various stages but some immature. x-24

Eosembia gravelyi ?

CULT 52 W. BENGAL: 1000 M Zone above PASHOK Large oaks along road in tea zone Tiny embiid in small tunnels in hard bark chips. ♀ flyjaped off. May be eggs & young. x-25-61

Aposthonia n. sp.

CULT 53 W. BENGAL: PASHOK P.W.D. REST HOUSE x-25-61
2500' EL. Tea area with scattered hard bark oak etc. Much disturbed by man. Small Oligotoma in dead twigs and bark cracks of tree poinsettia.

Aposthonia n. sp.

CULT 54. SAME but multicolor ♂♀ in split twigs and loose bark of small trees & shrubs.

Cult 55 WEST BENGAL: KALIMPONG 1275 M x-26
Residential area with scattered sal trees & rows of poinsetta. Multicolor common in loose bark, dead twigs, split branch butts, etc. Many penult ♂♀ became discarded

CULT 56 WEST BENGAL: KALIMPONG 1275 M
Same. Oligotoma in bark of trees, under lichens, etc. tunnels obscured by frass 2 spp? x-26

Aposthonia himalayensis ?

CULT 57 WEST BENGAL: 6 MI. S.W. KALIMPONG
500 M. Multicolor in large sal forest plantation
x-26 Oedembia

CULT. 58 W. BENGAL: 9 Mi. S. TISTA BRIDGE
350 M X-26-61 Canyon forest shaded side
Multicolor in bark crevices, under vines, etc. Oedembia

CULT. 59 W. BENGAL: SILIGURI X-26-61
Dry bark of roadside trees Oligotoma humbertiana

= 6 Mi. N.E. BORIO
CULTURE 60 W. BENGAL: 24 Mi. S.W. RĀJMAHAL
N.E. slope of low hills just S.W. of Ganges
River rock with scrub second growth, occasional large mango tree. 225 M elev. (New life zone) End of wet season but rained all day on X-30-61 220 M
Large pale embiid in matted leaves under and between stones in shade. Some penult. May be several species.
Oligotoma near annandalei

61 CULTURE 61 A, B, C Same place Mixed culture of
61 c Oedembia species on bark of tree under flakes and in
° spathula crevices. One small spp with pale or may be n. gr.
61 c small apoath. n. sp. Embiidae Note 61 and others has some stone specimens
61B nigra group Apoasthonia n. sp. or minuta, 61A O. nigra group
large jar Olig n. sp. Annandalei

62 CULTURE 62 Same place. Seed head of
Rafflesia-like plant. Top half dead filled with
medium-sized pale embiids. Tunnels extend
between ripe and green berries on stalk.
Oedembia

63 CULTURE 63 A & B. W. BENGAL: 40 Mi. NE DUMKA
X-30-61 100 M Hilly lava rock area. Patch of
soil on rocky slope with rocks lined up
in low walls. Tiny embiid, incl. penult or
in small tunnels on soil surface under rocks
Some medium sized species too.
63B Oedembia O. nigra

CULTURE 64 Some place.

Pseudembia juv. under rocks and in matted leaves between heaped rocks. Tunnels loosely spun devoid of frass, purple when fresh. Ent lead into round hole in soil. Embiids near surface because of recent rain. Some penult ♂?

Oedembia

O nigra group

CULTURE 65 A+B W. BENGAL: 12 MI. N.E. DUMKA 200 M barren grassy flat-topped ridge with sedimentary rock slabs. Pseudembia ? humbertiana ? beneath rocks may be same sp. as 64 tunnels similar. Numerous specimens

O. humbertiana

CULTURES 66 A+B. W. BENGAL: 5 MI. SW. BORIO X-30-61 Small sal trees on hill slope pasture with lava rocks. Embiids in hard bark flakes mostly small species 66A Aposthonia small n. sp.

CULTURE 67 A+B W. BENGAL: ALIPORE ZOOL. GARDENS XI-5-61 Old trees in 100 yr-old Zoo grounds. Embiids on every tree 2-3 sp sp in each tube incl minuta + pale-sided n. sp. Some tunnels in dry soil at tree base 67 Pseudembia paradoxa ?

67B graciana minuta n. sp.

CULTURE 68 Some but exclusive minuta Tiny tunnels evident at sides of flakes and penetrate soft under bark 67A Aposthonia n. sp.

C- 68 graciana

69 CULTURE 69 W. BENGAL: CHANDENAGORE, 23 MI. N.W. CALCUTTA 75 M XI-6-61 Bark of various trees, esp. mango in shaded grove at edge of city. Several species including one new one with filmy frass-spotted sheet web. Oligotoma graciana

CULTURE 70 W. BENGAL: DURGAPUR JUNGLE 175 M XI-6-61 Pale sp. all in penult in cat over sal plantation. Reddish soil with later. hematite rocks. Embiids under loose dead bark of low stumps; split branch butts leaf litter between stones and soil of termite md.

nigra group

CULT. 71 W. BENGAL: 22 NW DURGAPUR 175M
XI-6-61 Underside of limbs, bark flakes etc of low shrub-like trees in thickets. Lots of lac. Tunnels filmy, fuzzo-spotted. Appears to be n. sp. + gen? (Camp in old field surrounded by thickets) nigra group

~~Collection~~ = 10 MI. S.W. ~~ANS~~ ASANSOL
n. sp. Oligotoma n. sp.

CULT. 72 BIHAR: 6 MI. N.E DHANBAD 250M
XI-7-61 Low rolling hills with high ridge collected on rocky spurs of ridge among scrub with moss stones at base. Embiid tunnels visible coming from cracks and beneath surface of these stones Many penult ♂♀ collected may be same as #71 Crystalline sandstone
nigra O. nigra group

Cult. 73 BIHAR: TULIN 350M XI-7-61
Base of kopje-like granite hills. Scattered low trees. Found sp embiids under bark flakes (sp with pale plaurae) ♀ in rock cracks. ♂ Embiotina collected under stones. Pseudembia ♀
Collection kept until II-20-64, disputed — no more life

CULT 74 BIHAR: NAMKUM, RANCHI (LAC. INST.)
XI-8-61 675 M 2-3 sp. Olig on bark of scattered shade trees on lawns of Lac Institute Prob introduced spp. Pseudembia paradoxa maturing VI-63)
some gremiana

CULT 75 BIHAR: 18 MI. S.E. RANCHI XI-9-61
650 M 2-3 sp olig on scattered trees in semi wild zone. On bark crevices, lichens and moss. Sp with jet-black ♀ most common. With eggs + 1st instar ♂ {Pseudembia paradoxa / O. gremiana

discont X-1-63

76 CULT. 76 BIHAR: 18 MI. S.E. RANCHI (13 MI. S.E. NAMKUM)
650 M XI-9-61 1 ♀ and young (of killed preserve ♀) on bark of above trees. Tunnels large & white prob. Pseudembia paradoxa

Very large Oligotoma nigra group

77 CULT. 77 BIHAR: 18 MI. S.E. RANCHI 650 M XI-9-61
Under stone in cleared agric land. Small white web with silk under stone. Occasional specimen if web on other side may be distinct. All pale, half grown.
Oligotoma n. sp. nigra group (very large)

78 CULT. 78 BIHAR: 3 MI. W. RANCHI 700M XI-10-61
Under stone (grass) on low pasture hill top between villages. Black & all other parts & females. Under dense white leaf from hole in ground under stone & web up stone side.
Oligotoma nigra group n. sp

79 CULT. 79 BIHAR: KURU (32 MI. W. RANCHI) 700M
XI-10-61 Dry bark crevices of mango trees in grove in pasture. Prob. Pseudembia
Oligotoma Lumbertiana
9 MI. W.

80 CULT. 80 BIHAR: GHAGRA 675 M XI-10-61
Sal grove near base of hills. Embiids on bark of small trees and distinct spp. in fungus debris under its loose bark
Pseudembia ?
O. small gruenicna

CULT 82 BIHAR: 14 MI. S.E. NETARHAT 650 M
XI-10-61 Sal forest on rocky ridges at base of escarpment. Several spps. collected in bark crevices of various trees. One very large spp. present but no active colony found. Some young may be this spp.

CULT 81 BIHAR: 14 MI. S.E. NETARHAT 650 M
XI-10-61 Sal forest on rocky ridges at base of escarpment. One elongate tan spp under stones and matted leaves at edges. Retreats in holes in sandy soil. End of wet season, col.
Prob Pseudembia Oligotoma n. spp. not annandalei
Platembia

CULT. 82 BIHAR: 5 MI. S.E. NETARHAT 1000M
XI-11-61 Sal forest near crest of escarpment. Stones at edge of forest. Embiids, prob. Pseudembia paradoxa under edge of stones, sicle dense, fork matted sal leaves one embiid per web. Penult ♂ & ♀ not found under stones in shade of trees. Some Oligotoma in same niche Platembia

Oligoma gruenicna

CULT 83 BIHAR: 5 MI. S.E. NETARHAT 1000 M
XI-11-61 Dry sal forest near crest of escarpment: trees small; soil poor, eroded. Several spps. Oligs in bark crevices of sal. One spp. makes very white, naked silk tunnels. ♀ of this is jet black, 1st instar present. Some small embrids from sides of stone, and under stones included.
Aposth.: small n. sp.
Apster. 07
Teratembiidae

CULT. 84A + B BIHAR: 5 MI. S.E. NETARHAT 1000 M
XI-11-61 Above habitat. Large black ♀s (Oligotoma?) in individual nests with egg masses, some hatching. Tunnels inconspicuous due to frass covering; broad with but few branches along sal bark crevices. Tunnel expanded over site of egg mass. Mass composed of 75 – 200 eggs covered with grayish matrix only operculum visible. Numerous microphysids present, some collected. Colonies often lack ♀, only
Oligotoma nr. annandalei

CULTURE 85 BIHAR: 3 MI. N. KODARMA 440 M
XI-12-61 Rocky, crystaline ridges covered with low forest, mostly sal. Oligotoma n. sp. on bark of several trees. Tunnels follow vertical crevices and form dark blind mutts densely covered with frass. Embids mostly late penult. 107 collected.
Very common Uninhabited forest reserve
Oligotoma n. spp. nigra group

CULTURE 86 BIHAR: 3 MI. N. KODARMA 440 M
XI-12-61 Rocky crystaline ridges covered with low mixed forest, mostly sal. Oligotoma spps. mostly in ~~rock~~ crevices or surface of boulders. These tunnels usually pure white devoid of frass but some as above. Also under stones and some bark. Oligotoma n. sp.

CULTURE 87 BIHAR: DEHOUR FOREST 220 M
XI-13-61 Sal forest in shady dell, mixed spps. Rocky, gneiss hill rises abruptly. 1 blank, large ♀ on charred sal sapling with dead tips. 1st, 2nd instar young distributed in crevices down the coarse bark, Separated and deep in bark layers.
spatula + annandalei

all 3 cultures combined

CULT 88 (ABC) BIHAR: DEHOUR FOREST RESERVE 220 M XI-13-61
Mixed spp. in bark crevices. One sp with pale pleurae. One on rock surface has cleaner white tunnels but may be same as Oligotoma with grass-covered tunnels.

Oligotoma n. spp.

89A + B discontinued X-1-63

CULT 89 (AB) BIHAR: PUSA FARM 120 M XI-14-61
Ganges Valley flat farm land with row trees Agric expt. stat. area "Embia" minor abundant in bark crevices and soil at base of various trees. Webs highly elastic. Lavender when fresh. Specked with grass. Females more abundant low on trees and in soil, males higher. Abundant ♂♂ & ♀ mature. Some oligotoma mixed in

89B Oedembia & saundersii

discont. X-1-63

CULT. 90 BIHAR: PUSA FARM 120 M XI-14-61
Same place. Oedembia pusae is large matt-like webs similar to minor. Prefers split branch butts. No adult males but several penult. Oligotoma mixed in

Oedembia and ~~saundersii~~

CULT 91 BIHAR: PUSA FARM 120 M XI-14-61
Same place Mixed Oligotoma & apposthonia in bark of various trees Also Oedembia

a. indica

CULT 92 NEPAL: 13 MI. N GIRGANJ 200 M XI-16-61
Mixed virgin valley forest on gentle slope up to mts Beginning of dry season. Embiids common in bark. This culture with "minor" type females (males collected in vial) plus Oligotoma spp. Many juveniles in grass-covered webs in bark cracks.

PLECTEMBIA ?

Cult 93 NEPAL: 13 MI. N. GIRGANJ 200M XI-16-61
Mixed virgin valley forest same niches as above. (92) but larger sp Oedembia at twig ends and bases. Also possible Oligotoma mixed in.

small Oedembia

CULT. 94 NEPAL: 13 MI. N. GIRGANJ 200 M XI-16-61
Same as above. Small spp in superficial bark

CULT 95 ABC NEPAL: 10 MI. SW. SOPIYANG 1800M
(BETWEEN PALUNG + KATHMANDU

OEDEMBIA

Dry road bank in region of rain shadow and stunted ~~trees~~ and shrubs. Embiids common in purplish, grass-covered, elastic silk in soil crevices on SW exposure. Absence or shaded face Oedembia sp.. Most in penult instar many males. Tunnelay densest in holes where embiids rest. Could this be an overwintering phase?

CULT 96 NEPAL: CHOVAR VILLAGE, KATHMANDU Valley
XI-18-61
Trail bank (N.E. exposure) crevices. Tunnels completely covered with bits of lichens, thus obscure. Embiids in dense, elastic, white silk. Must be same as above but penult males average smaller. Pasture land. Larger tunnels on underside limbs of large trees

Oedembia

CULT 97 A,B NEPAL: KATHMANDU Temple forest which must be remnant of old valley forest. Embiids very common in tunnels of Cult 95 type but in bark crevices and under lichens. Often only one embiid per tunnel but at times several in colony. All penult Oedembia.
XI-17-61 OEDEMBIA

CULT 98 NEPAL: KATHMANDU Row of eucalyptus trees with soft redwood-like bark. Above sp. in bark crevices. XI-18-61 OEDEMBIA

CULT 99 NEPAL: 3 MI. NE PALUNG 1870M XI-22-61
Under stones in pasture with small pines and oaks a fair shadow, dry zone. Steep slope, small rocks. Embiids rare. Prob. Parembia. Webs at times purple

100 CULT. 100. NEPAL: 2 MI. NE. LAMIDANDA 1660M XI-22-61
Pine-oak zone on steep slopes. Conspicuous white webs on soft granitic road bank rocks. Tunnels purple when fresh, elastic, lead to crevices. Some mat ♀ and 3rd instar young. Some found in leaf litter in crevices Parembia?

Eoembia nepalica

CULT 101 NEPAL: 2 MI. N.E. LAMIDANDA 660 M XI-22-61
Pine-oak Zone. Under side of planks of small bridge culvert. Large white tunnels with glistening surface. No sun. Embiids must feed on superficial plank surface. Prob Parembia

CULT 102 NEPAL: 2 MI. N.E. LAMIDANDA 1660 M XI-22-61
Pine oak Zone. Some juv. from road bank but most from under bark of small oak sapling. May be one spp. of Parembia

Embia
Oligotoma large "nigra"

CULT 103 NEPAL: RAPTI VALLEY, 10 MI. N.W. HITAURA
400 M XI-23-61 Valley with extensive virgin mixed sal forest. Parembia in various niches esp. loose bark of small dead twigs and branch nodes. Also on underside of large log slanted about 8 ft off ground Several adult ♀ and some 3rd instar young cultured ♀ adult ♂ collected

Oligotoma very large nigra
Edaphembia

CULT. 104 NEPAL: RAPTI VALLEY, 10 MI. N.W. HITAURA
400 M XI-23-61 Above place but mostly on sunny ridge. Small Oligotoma with pale thoracic bands, incl young and 1 teneral ♂ in bark cracks and under flakes esp dead bark of small saplings Apsothonia

105 CULT 105 NEPAL: RAPTI VALLEY, 10 MI. N.W. HITAURA
400 M XI-24-61 Above place. Dead bark around cut off branches of small tree Apsothonia with banded thorax ♂ and apt. ♀ alate males Some spp. as #104 Apsothonia
n. sp.

CULT 106 NEPAL: RAPTI VALLEY, 10 MI. N.W. HITAURA
400 M XI-24-61 above place. Shaded tree trunks, Some large, buttressed. Conspicuous webs of 3rd instar radiating from large central tunnels. Silk white devoid of frass or other cover. Most colonies (3) lacked embiids but had numerous morphoids. Several 2-3rd instar cultured from one colony. Eggs laid in flat mass. Coated with dark gray material

EOSEMBIA nepalica

107 CULT 107 NEPAL: RAPTI VALLEY 10 MI. N.W. HITAURA 400 M XI-24-61 Several Parembia & Oedembia in trunk node loose bark Oedembia Psoudembia

CULT 108 NEPAL: 2MI. N. AMLEKHGANJ 450 M, XI-24-61
Foot hill area with mixed sal forest. Pines just above.
This culture mixed Oedembia, Apostkonia etc in bark
flakes of living & dead trees. Oedembia

discont x-1-63

109 CULT. 109 NEPAL: 2MI. N. AMLEKHGANJ, 450 M, XI-24-61
Small apostkonia in tunnels under arched sheet of sal bark on dry ground. About 6 spec, some ante-penult. of Apostkonia n. sp.

CULT 110 NEPAL: 2 MI. N. AMLEKHGANJ, 450 M XI-24-61
Mostly Oedembia in and under dry, thick bark of large sal log. Bark cracking off.

CULT 112 U.P.: GORAKHPUR (REST HOUSE) 150M XI-27-61
Garden. Tunnels in scarred branch axis with curled dead bark. Dry situation. Several immature Parembia (?) cultured. Saundersii is same niche 1 of collected.

CULT 113 A+B U.P.: KANPUR (allen Forest Reserve) 150M XI-29-61
Mixed forest in dry season. Embiids in splintered branch butts, especially of suckers at base of trees. Also in and under loose dead bark. Rather rare in open bark because of dry climate.
These cultures contain mixture of 2-3 Oligotoma possibly Oedembia and Parembia. Small Parembia

CULT 114 U.P. KANPUR (above place)
Entire culture from dead bark and splintered butts of suckers at base of large trees at edge of forest

CULT 115 U.P.: 12 MI. S.W. BAREILLY 190M XI-29-61
Bark of mango in grove in agric. zone
Small with pale sides.

CULT 116 & +BU.P.: BHOWALI 800M (7 MI. E. NAINI TAL)
Topotypic Embia major Emmo. XII-1-61
Mostly pine forest with mixed oaks in cooler areas.
Steep ridges and ravines. Talus like stones in ravines
and S.W. exposure. Major very common on S.
and S.W. slopes and open ridge tops. Colony consist
of very large central tunnel and radiating small
tunnels of young. Large tunnel connects with soil
burrow and may radiate amongst leaves to adjacent
stone. Usually only one colony per stone. Adult
females old with antennae eaten short. Only one
with eggs. These were in a loose clumps. Most young
in 2nd instar but above 1st and 4th collected
No trace of males

Parembia major

CULT. 117 U.P.: 10 MI. N. KATHGODAM 1240 M XII-1-61
Moist pine forest on winter slope of cyn, some-
what more sunny on E-W spur where collecting took
place. Small white tunnels in matted needles and debris beneath
small stones. Each with but one small embiid of
unknown genus. Type lot Oligotoma ligulata n. sp.
mature ♂♀ VI-10-63

CULT 118 U.P.: 10 MI. N. KATHGODAM 1240 M XII-1-61
Cool slope in above place Large colonies of Parembia
on stumps and other trees. Alder-like species of tree.
Parembia

CULT 119 U.P. 10 MI. N. KATHGODAM 1240 M XII-1-61
Cool slope in above place. Small embiids in ramifying
blind tunnels in bark crevices. Rather extensive. No large
parent tunnels evident. Doesn't appear to be Parembia
On bark of alder-like tree. Oligotoma large n. sp.
ligulata

120

CULT 120 U.P. 3 MI. N. KATHGODAM 700 M XII-1-61
Rocky ridge in sal forest. Embiids in bark of various
species. Surface tunnels entirely covered with frass. Embiids
2-3rd instar deep in crevices. Adult female tunnel large but
usually unoccupied. 1 tired ♀ collected and cultured
1 dead dry ♀ female placed in alcohol. Ecology like Nethasbat

Pseudembia paradoxa

Oligotoma n. sp. trikamata

CULT 121 U.P.: 3 MI. N. KATHGODAM 700M XII-1-61
Bark in above place. May include several sp.
1 colony of Parembia seen in this zone. Seemed to be empty 1♂ Oligotoma trihamata IX-24-63

CULT 122 U.P.: 3 MI. N. KATHGODAM 700M XII-1-61
Under stone on sal ridge. One small embiids probably same as cult. 117 2♂ only X-11-62

CULT 123 U.P. KICHHA (S. OF KATHGODAM) 310M
XII-2-61 Parembia truncata n. sp.
Plantation of trees in valley forest zone. Many remnant trees along road. Dry season. Large tunnels at times matting long dead 2-3" stumps with loose bark, also on branch nodes etc. Most antepenult, one male penult. Oligotoma and Metembia at times mixed in same mass of silk.

CULT 124 A+B U.P. KICHHA 310M XII-2-61
Same place as 123 Tunnels of oligotoma common on most trees and dead stumps and under loose bark. Some tunnels filmy, sheeted over bark surface and some packed with frass. Others forming dense white typical tunnels. Many adult ♂♂ and a few penult ♂ of jet-black sp. May be nigra or relative. Cultures should include other species 124B Oligotoma nigra ?

125 CULT. 125 A+B U.P.: KICHHA 310M XII-2-61 METEMBIA ?
Same place and niche esp. on and under dead loose bark of slender stumps. Small multicolored juvenile some penult ♂. One larger dark female and 1 penult ♂ of a new and distinct species.
Edaphembia ?
Distinct genera

CULT. 126 U.P.: DEHRA DUN (Forest Research chest)
XII-9-61 Damaged ends of branches etc of shaded low mango trees Webs heavily covered with frass covering surface of limb and retreating into cracks + holes Oedenbia dobhali penult ♂ ♀

CULT. 127 U.P.: 7 MI. S.W. DEHRA DUN 600 M XII-10-61
Virgin sal forest on sides of valley, flat about Mixed species. Beginning of cold dry season. Embiids numerous on bark of smaller trees and limbs esp. in crevices, holes, and splintered butts Tunnels frass-covered apparently Oedenbia, Metembia + Oligotoma. Most in penult stage. Large culture

128 CULT 128 U.P.: 11 MI. S. MUSSOORIE 1200 M
XII-10-61 Steep, rugged slopes and ridges with xeric flora, brushy with patches of Euphorbia and scattered Erythrina. Parembia webs common on dead limbs, tunnels running along underside often beneath loose bark. At times tunnels enter hard dry soil at base of ~~shrubs~~ shrubs. Small culture with about 6-8 penult ♂♂ ♀. PAREMBIA
Also tried oak forest just below Mussoorie, 1800 M, some scattered stones but no trace of embiids.

CULT 129 BIHAR: PUSA FARM
2-3 Oligotoma from fibrous, dry interior of old agwood. O. humbertiana

CULT 130 - U.P.: 8 MI. S.W. DEHRA DUN 750 M
Mixed hill forest, mostly oak. 1 antepenult. ♂, pale Oedenbia, on mossy bark of tree in cyn, sunny side Parembia

CULT. 131 - U.P.: 14 MI. S.W DEHRA DUN 525 M
Dry, low hill forest, mostly pine. 2 juv embiids under stone in grass. Oedenbia or Metembia in dry bark of dead limbs but rare, colonies empty.

CULT 132 PUNJAB: 3 MI. S. AMBALA 350 M
Roadside strips of acacia etc. Embiid tunnels common around bark scars and spintend suckers Tunnels extend into dry cracked ground. Oligotoma in frass-free, pure-white tunnels fair number collected. Parembia in tunnels in soil at base 2-3 collected. One adult female Olig with paler head collected under stone
O. humbertiana. Parembia valida 132'

CULT 133 PUNJAB: BEAS (S.E. of Amritsar)
250 M XII-12-61 Flat, semi arid agric land with broad strips of mesquite-like acacia along road. Dry and dusty. Embiid retreats in split branch and small stump ends. 1-2 Embiidae species, many penult. Some fly puparia in tunnels. Oligotoma mixed in probably.
Parembia

CULT 134 PUNSAB: BEAS 250 M XII-12-61
Same place as #133 Oligotoma under small stones
Small Parembia

CULT 135 W. PAKISTAN: LAHORE 250 M XII-13-61
Region like Beas, dry flat irrigated farm land. Colonys under artificial stones on artificial hill in park next to Zoo. Webs very dense, elastic, not common. 3-4 embiids collected, one penult. ♂. Tree cover Prosopis. No embiids seen on bark of park trees - bark very dry and free of epiphytes. Parembia

CULT 136 W. PAKISTAN: 3 MI. N. KAMOKI (10 MI. S. GUJRANWALA)
265 M XII-14-61 Flat agric land with grove of large planted trees, no underbrush, only grass Dry season. No embiids evident on bark. Colonies found in soil cracks of black Camponotus ant nest at bases of tree. Tunnels also under loose bark below soil level. Small Embiidae prob. same as #135
Mostly penult stage.
EDAPHEMBIA

CULT. 137 W. PAKISTAN: 4 MI. N.W. KHARIAN 350M
XII-14-61 Heavily eroded sandy ridge covered with Mesquite and shrub-like trees and grass. Embiids under soft sandstone rocks. Tunnels radiate various direction. Several tunnels penetrated about 2-3 inches and had about six embiids concentrated. All in penult stage. Appears to be a distinct sp. of Embiidae. About 15 collected.

Some species as 136 also collected under stones of nearby rest house grounds. Culture is thus mixed. Paraembia + Lobosembia

CULT. 138 W. PAKISTAN: 4 MI. N.W. KHARIAN 350
XII-14-61 (District Council Rest House) in bad lands. Species 136 collected under old bricks and brought in stones. One penult. ♂ was very small and may be distinct. Edaphembia

CULT 139 W. PAKISTAN: 13 MI. N.W JHELUM 350M
(4 MI. N.W. DINA) XII-15-61 Low eroded hills covered with Acacia and thorn bush Oligotoma under small stones. Adult ♂♂ + ♀s mostly. Pure culture Olig. nigra

CULT 140 W. PAKISTAN: 13 MI. N.W. JHELUM 350M
XII-15-61 Same place. Larger species, possibly 2 n. sp. Embiidae. Under stones, esp. in shaded side of Acacia trees. One colony had about 6 half grown Others only one per tunnel. Paraembia

CULT. 140 W. PAKISTAN: 13 MI. N.W. JHELUM 350M
XII-15-61 Same place Mixed culture Oligotoma + Embiidae. Edaphembia ?

CULT 142 W. PAKISTAN: ~~12~~ 5 MI. S.E. RAWALPINDI
500M XII-15-61 Shaded slope of rough conglomerate cyn. Thorn bush on higher slope, larger trees lower down. Embiidae in rotted out branch hole, ~~of~~ spoopin. Tunnels in blocken old wood, especially at sides of hole. 20 specimens, esp. penult ♂♂ cultured.

Paraembia

CULT 143 W. PAKISTAN: 5 MI. S.E. RAWALPINDI

500 M XII-15-61 Parambia under stones, in shaded conglomerate cliff rocks and in scarred Acacia bark plefera shaded slope. Parambia

144 CULT. 144 W. PAKISTAN: 5 MI. S.E. RAWALPINDI

500 M XII-15-61 Loboambia? under stones in Acacia leaf litter in semi-shade Parambia

CULT. 145 W. PAKISTAN: 20 MI. N.E. RAWALPINDI ~~850~~ 950M XII-16-61

Rocky foothills vegetated with wild olive and other low trees. Heavily eroded. This culture from rotting bark of low stumps. Within 6" of ground. Cedembia-like webs also on bark surface but all empty. Parambia in bark scars + holes

CULT. 146 W. PAKISTAN: 20 MI. N.E. RAWALPINDI 850 M XII-16

Rocky foothills. Small species under rocks. Tunnels radiate in hard soil. Usually about 6 young per nest concentrated in deeper tunnels, about 2" deep. No adults prob Parambia valida

CULT. 147 W. PAKISTAN: 20 MI. N.E. RAWALPINDI 850-950 M Rocky foothills chiefly covered with wild olives. Pines in higher zone. Parambia under stones. 3rd to 4th instar. XII-16-61 First winter rains falling

CULT 148 W. PAKISTAN: ~~20~~ 12 MI. N.E. RAWALPINDI 650 M

XII-16-61 Parambia under stones in ~~thorn~~ thorny scrub on first rocky foothills.

CULT 149 W. PAKISTAN: 12 MI. N.E. RAWALPINDI 650 M

XII-16-61 Low, thorny scrub on first foothills of Murree Hills. Small n. sp., culture includes adult ♀, penult ♂ and several young. Colonies under stones under brush.

Edaphembia

CULT. 150 W. PAKISTAN: MARGALA PASS (NR. TAXILLA) 625M
XII-17-61 Rocky, ledgy limestone ridge with low thorn bush. 1 sp. multicolor embiid, some penult, in leaf litter caught in rock crevice ~~at~~ at ~~base~~ base of shrub-like tree. Shaded slope. Embiids rare.

Small Parembia

CULT. 151 Same place but on exposed slopes, mostly under small stones. Mixed Oligotoma + Parembia

Olig. nigra

CULT 152 W. PAK.: ATTOCK 360 M XII-17-61 Barren rocky hills composed of vertical shale Oligotoma and Embiidae. Latter under larger stones. Parembia

CULT 153 W. PAK: 5 MI. W. PESHAWAR, ~~340~~ 400M, XII-18-61
Thatched back yard Small stone in exposed low grass Oligotoma + small embiid. Parembia also in this place, esp. in litter of harvester ant nest
Parembia

CULT. 154 W. PAK: 8 MI. E. PESHAWAR 400M XII-18-61.
Roadside strips of trees on highway. Embiidae under bark of low stumps, not yet rotten Parembia

CULT. 155 W. PAK. 8 MI. E. PESHAWAR 400M XII-18-61
Same place but Oligotoma under stones along RR embankment Parembia

CULT. 156 W. PAK. SPINAWARAI, 9 MI. W. KOHAT, 650M
XII-19-61 Stony margins of fields of grain in small valley in rocky hills Parembia (etc?) in leaf littered stones. Lobocembia

CULT 157 A+B W. PAK. SPINAWARAI, 9 MI. W. KOHAT 650M
XII-19-61 Brushy, stony margins of grain fields at base of rise. Embiid tunnels radiating beneath and between small cobble stones. Common. All in penult. instar — a stout tan sp. Possibly a small multicolor embiid mixed in.
Embiidae Edaphembia Lobocembia

CULT 158 W. PAK. 2 MI. N. KOHAT 600 M XII-19-61
Arid cyn in rugged limestone mtns. Numerous stones on ground near loose Prosopis. Common brown Embiid same as 157 in between and under small rocks. Very common. no life XII-11-62

CULT. 159 W. PAK.: 2 MI. W. CHERAT 1200 M XII-20-61
High ridge with shrub-like trees, Olivea, Acacia, etc. Bunch grass. 1 ♂ penult. under stone, some webs collected but perhaps no other live specimens in talus stone semi-shaded. Parembia

CULT 160 W. PAK: 2 MI. W. CHERAT 1200 M XII-20-61
Same place, Shaded side of ridge crest. Parembia from rocks ~~next~~ next to roots of bunch grass. Another large colony under rocks at base of tree. 1st colony all 2nd instar. 2nd colony largely penult ♂ & ♀ Some ♀ very pale (may be fulvus mutation) Many old tachinid puparia in webs.
Parembia

CULT 161 W. PAKISTAN 6 MI. W. CHERAT 900 M
XII-20-61 Gully farther down slope. Embiids under small stones, esp. at base of shrubs. Oligotoma and n sp. not common. Parembia

CULT. 162 A+B. W. PAK. TORKHAM (W end of Kyber Pass) 750 M, XII-21-61 Rocky wash of cyn patch of stones and debris at base of bush near immigration station. Oligotoma and small multicolor embiid. Many individuals cultured Edaphembia
O. nigra
Parembia

CULT 163 ABC W. PAK: ATTOCK (W side river)
360 M XII-22-61 Barren, rocky hills (attock slate)
several spp under stone Edaphembia

~~#~~ 163c 1 ♀ parembia stays penult 9 months
discontinued VI-12-64

CULT 164 A-B W. PAK: TAXILA 550 M XII-22-61
Near Buddhist ruins. Small stones in bermuda grass beneath trees. Several species, abundant
O. nigra and Eluphembia

CULT 165 A-B W. PAK.: RAWAT 600M XII-23-61
(Near Maqbra Tomb) Stones along low sandstone ridge. Dry grass with widely scattered Acacia. Embiids common, in surface tunnels. Penult stage. Ten species and small multicolor
Scattered colonies on old stone walls of tomb.

Lobocembia

CULT 167 DELHI RIDGE, NEW DELHI 260M XII-30-61
(near airport) Rounded ledges of metamorphic rock forming low ridge. Vegetation thorny, cat-claw-like tree-shrubs, numerous loose rocks. Soil dumps. Large culture contains many Parembia often one individual per isolated rock retreat tunnel (made by embiid) extends into firm soil, rock crevice etc. At side of ~~retreat~~ piled rocks and tree bases with loose ~~rocks~~ bark tunnels more numerous and extend from stone to stone beneath matted leaf litter. Also mixed in are 2 spps. Oligotoma (nigra? Rambertiana and a Metembia (1 male caught).

Parembia

CULT 168 Some place. Small culture, mostly Metembia from loose bark at soil level.

CULT 169 U.P.: KITHAM LAKE, 11 W. AGRA
200 M XII-31-61 High Prosopis forest near lake, extensive planted area in vicinity Dry season. Most collecting in subsoil, dead bark of small stumps. Often many Parembia retreated to lowest level & tunnels (about 6" down) Some tunnels in soil. Metembia also collected in same niche and under dead bark higher in trees. Oligotoma present under stones and dry branch butts. Few females of Olig. but many penult & other two genera. Large culture.

Eclophembia Parembia nigra

CULT. 170 U.P.: KITHAM LAKE, 11 MI. W. AGRA

Some plan as 168, 169 This culture contains small multicolor and 1 adult ♀ Oligotoma. The former with penult ♂ all under loose bank of low stumps, near and below ground level. I-2-62 One medium multicolor collected on silty bank. Oligotoma also in this niche

Parembia

CULT. 171. Some as above but moderate multicolor from one colony under loose bank of slender, high stumps of Acacia Some penult ♂. I-2-62

Parembia + Edaphembia

CULT 172 U.P.: NAGLA BIRBHAN, 240M, 16 MI. S.W. KAGARAUL (30 MI. S.W. AGRA) I-2-62 Dry season. Low hill densely covered with red sandstone rocks and slabs with scattered OAK-LIKE trees (covered with brown, dead leaves) called DOHE.

Parembia sparsely present, One nest per stone Few surface tunnels lead to deep subterranean hole apparently made by embiid. This culture made up of many 2nd instar young on a surface web all of one brood. This seems to be an original plant formation.

Parembia

CULT 173 Some plan and niche Culture mostly a small multicolor living in felted webs following burrow tracks in hard soil under stone. 1-2 embiids per tunnel some adult ♀ and ♂ cultured also several penult. Culture also includes at least one juv. female of a fulvous species

Parembia

CULT 174 RAJASTHAN: GAME SANCTUARY, BHARATPUR 225M I-3-62 Swampy black cotton soil with low thorn trees. Embiids common in all dead bark and limb part same as Kitham Lake 2 Metaembia and several Oligotoma cultured. Soundness ♂ collected.

Parembia

CULT 175 RAJASTHAN: MAHWAH, 280M 5-I-62

Low, abrupt rocky ridge, goat pasture denuded of shrubs and trees. Embiids under stones around and within walls of stone castle. Several species mixed in this cult. penult ♂ of 2 spps. of Embiidae Dry season

Parembia & Edaphembia

CULT 176 Same place. 1 ♀ (uniform black), large sp. and eggs. Eggs laid in one plane on upper surface of web where it contacted underside of stone. Tunnels broad, suggestive of Parembia.

PAREMBIA

CULT ~~170~~ 177 RAJASTHAN: DAUSA, 1650 ft 5-I-62

Hilly crystaline, rocky ridge rising from agric plain (numerous rock cutters & gravel makers) Several species common under scattered quartz rocks, esp. around bases of shrubs and large euphorbia. 1 ♂ 1 lumbertiana collected and 1 large male of ~~Metembia~~ Plectembia

All added to one large culture jar

Parembia & Edaphembia

CULT. 178 RAJASTHAN: HILLS E. OF JAIPUR 450M 6-I-62

Rocks in sandy grassland at base of old castle walls Region not normally rocky or this sand. Embiids in nearby hills. Edaphembia

CULT. 179 RAJASTHAN: HILLS E. OF JAIPUR 450M 6-I-62

Small N-S valley and ravines in rocky ridges. Numerous rocks sheltering 2-3 spps Embiids ♂♂ in semi-shade of low trees. Natural grazed vegetation. O. nigra

CULT 180 A+B Same place but pure Parembia

Parembia

182 CULT 182 RAJASTHAN: KISHANGARH 450 M 7-I-62

Low rocky hills with scattered Euphorbia (copper ore) Dry conditions small embiid colonies numerous but embiids not at surface except mostly under one large stone. 8 adult males collected

EDAPHEMBIA

Parembia CULT 183 Same place Parembia under stones on shaded side of Euphorbia tunnels visible at ground edge of stones go from stone to stone and down deep hole.

CULT. 184 RAJASTHAN: 5 MI. W. BEAWAR 500 M 7-I-62
Rugged, granitic, arid mtn range. Chiefly covered with cactus-like Euphorbia Small embiid ("minor") chiefly collected. Moderate embiid and Parembia may be mixed in. All under stones. Dry season.

Aposthonia humbertiana

CULT 185 RAJASTHAN: HILL S. OF PALI, 275 M 8-I-62
Very dry rocky granitic hill just S. of Pali (site of Jain temple). Small embiid tunnels common under shaded stones, but very few embiids at surface. Several Parembia colonies seen. Culture is weak with only 2 or so small "minor." Low thorn bush country, Mesquite on flats.

Edaphembiid

CULT 186 RAJASTHAN: 5 MI. N.E. SUMERPUR 350 M 8-I-62
Dry valley with low granite outcrops. Granitic ridge just East. Collected under stones along road, esp in shade of roadside border trees. "Minor" webs common but rarely occupied. Parembia also present esp between stones piled long ago at base of low shrub. A medium species also present. This culture all Parembia 1 penult + several 2nd instar. 2 adult ♂ collected this date.

Embiidae Parembia n. sp.
CULT 187 Same place: 1 ♀ Oligotoma humbertiana ? + 1 pale penult ♂ ? maybe small Parembia

CULT 188 Same place: Several small embiid

CULT 189 RAJASTHAN: E. SLOPE MT. ABU 400 M 9-I-62
1 Large n. gen ♀ pale head, prothorax + abdomen also one nest with 1st instar. All under stones in deciduous brushy forest, semi-shade. Many tree spp. Distinct from plains. Echinembia

111 Cult 190 Same place and niche. Few Parembia and some adult ♀ Oligotoma Cult 190A Same but only Oligotoma

SAUNDERSII

CULT 191 Same place One colony of medium embiid all penult. Developed on low stumps and retreated into soil and adjacent stone. O. saundersii

Parembia

CULT 192 RAJASTHAN: E. SLOPE MT. ABU 750 M 9-1-62
Higher forest with bamboo. Embiids colonies on split branch ends, bark, etc but all empty. Several genera. Culture contains 2 adult ♀ Oligotoma from shaded road bank crevices.

CULT 193 RAJASTHAN: 3 MI. S.E. SIROHI 450M 9-1-62
Rocky, brushy pasture. Very dry condition
Parembia under stone, often in common with small Embiid and Oligotoma. These cultured in
CULT 194 Edaphembia Parembia

CULT 195 GUJARAT: 5 MI. S. PALANPUR 250 M 10-I-62
no life XII-11-62
Dug out of soil at base of "mesquite" in black cotton soil 1 mat ♀ oligotoma & 1 juv ♀. Web was above ground surface in Mesquite flat in rolling farm land. Dry season

CULT 196 GUJARAT: 13 MI. W GODHRA 150M 10-I-62
1 pale embiid dug out of black cotton soil under small stone (about 6" down) web very white, elastic. 1 juv ♀ oligotoma. Type of web, place Lent next to mesquite stump Environment: Low thorn scrub, mostly mesquite. Dry season
O. saundersii

CULT 197A+B GUJARAT: CHANCHELAO, 4 MI. E. ~~GOG~~ GODHRA 175 M
12-I-62 2 cultures of Parembia 197A 1♂ with eggs, 197B with 2nd instar and 1 ♀. Eggs white, naked, deposited in double or triple layer mass on upper surface of web.
Environment: Dry, rolling, flat land with sparse deciduous forest, mostly stunted teak. Collected in vicinity of kopje of granite surrounded by scattered rocks and brick debris of old temple.
Other sp. embiid present, also Oligotoma, neither collected or cultured
197A Parembia

CULT 198 GUJARAT: MANGAL MAUDI, 13 MI. W. DOHAD 300M ✱ 12-I-62
Rolling, dry teak forest with many lava rocks on low knolls and ridges. Embiids rather common but hard to collect due to heat and dry soil. This culture comprises adult females, small, jet, shining black.
saundersii

199

CULT 199 GUJARAT: 13 MI. W. DOHAD 300M & 12-I-62
Same place + niche as 198 This contains one adult ♀ of a large ♀, n. sp. black Oligotoma and one female of a smaller species, ~~EMPHEREMBIA~~ LUNATA ~~TOKONEMBIA~~ Rumbertiana n. sp.

TYPE LOT

CULT 200 GUJARAT: Same place as 198-199 Tube contains one adult ♀ Paremblia. PAREMBIA

CULT 201 MADHYA PRADESH: 6 MI. N.W. BAGH, 360 M 12-I-62
Lava plateau with sparse, dry, teak forest. Brief stop. 1 adult ♀ pale, multicolored embiid with eggs. 1st instar young from neighboring tunnel included (may not survive) Eggs were white, naked and in a clump (much like ant eggs)

clustered

CULT. 202A + B MADHYA PRADESH: 6 MI. N. TANDA 550 M
13-I-62 Ghat slope, lava rocks in dry, sparse teak scrub. Black cotton soil deeply cracked, damp 6" down underlaid with cracked rock. Oligotoma present in branch burth and bark but not collected. Embiids cultured from those carefully excavated. Cultures contain at least one adult ♀ of new Embiid and 1st - 3rd instar young. One ♀ had eggs in clumps as desc. in #201
1 ♂ collected, 1 penult male cultured.

Large embiids have red mites sucking on body

One nest made use of dead leaf cells of Megachile nest.

METEMBIA

CULT. 203 MADHYA PRADESH: 5 MI. S.W. MANPUR, 480M
13-I-62 Ghat slope, similar to #202. Same embiid as collected in 202 present but not cultured. This culture contains 1 mature female and eggs of Pseudembiinae also one juv ♀ of some. Much debris of other colonies included, may or may not have embiids within.

CULT 204 Same place. Contains 1 mature female of multicolored embiid, possibly same as 202, but larger. Also debris of other colonies. Most good colonies in this ghat zone make use of ant burrows packed with seeds and grass fragments.

A+B
CULT 205 — MADHYA PRADESH: KHALGHAT (=PHALGHAT) 200 M
14-I-62
Open bluffs on S. side of river next to Dak Bungalow Under large lava rocks. Black cotton soil. Several species incl. Oligotoma, large + small Embiidae. (Latter collected 10 ea)

Rumbertiana
Elaphembia

CULT. 206 MADHYA PRADESH: JULWANIA 300M 14-I-62

Treeless, open hillside strewn with lava rock, black cotton soil. Embiids rare but 2 brown ♀♀ with tan head, collected and cultured. Dry conditions.

CULT. 207 MADHYA PRADESH: 8 MI. S.W. SENDHWA 590 M 14-I-62

Dry, hilly teak forest with scattered lava rocks. Embiids rare but 2 small Embiid ♀s collected (multi-colored Toxophrembia

PAREMBIA

CULT. 208 MADHYA PRADESH: 10 MI. S.W. SENDHWA 400 M

14-I-62 Greener ~~[illegible]~~ trees along creek bed permanent shade. Many embiid signs under bark flaked, dead stumps bark etc. All embiids retreated out of reach, due to dryness. Culture contains 1 adult ♀ multicolored embiid, and 1 3rd instar tan (Oligotoma?), and possibly some 1st instar, from crevices of dead burned stumps.

N gen + sp. Teratembiidae
O. lumbertiana DIED OUT VI-64

A+B

CULT 209 BOMBAY: 17 MI. N.E. MALEGAON, 450 M, 15-I-62

Lava bluffs in barren, treeless country side, tops and sides strewn with lava boulders and covered with sparse, small, thorny trees and shrubs. Embiids rare. Very small species most common but no adults collected. Several 1st and 2nd instar in each culture. One culture contains 2 adult ♀ and the other 1 adult ♀ of a large dark brown species with head, prothorax, & legs mostly orange. Each ♀ had several large eggs attached to soil and caked with some substance. These eggs were placed in the cultures.

209A Metembia

Pleotembia colorata type series

Tunnels of large species were pure white dense silk under large rocks, esp. near grass roots at edge. Eggs and associated ♀s were near soil surface (black cotton soil) Very dry, hot conditions, 85°F in shade.

CULT 210 Same place but only early young of small embiid.

Metembia

CULT. 211 BOMBAY: 3 MI. N.E. CHANDOR, 840M, 15-I-62

Brush country at base of high lava bluffs. Scattered stones on dry black cotton soil. Small embiid present but not collected. Culture contains: 1 large orange + black ♀ and associated 1st instars from under stone in shade of lantana bush. 1 slender brown ♀ (mature?) from thin small web under stone under lantana on shaded slope

Edaphembia Metembia

C-210 lots of large egg mass and some early
young Th-14-64.